

Epistemic (In)justice in the Construction of Climate Change Risks

Māori Epistemology and the IPCC

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Abstract

The IPCC can be seen as a global authority on climate change science. Their construction of the risks of climate change and ways of managing those risks influences both policy and research worldwide. I will argue that these constructions have a strong normative component. As a global institution, the IPCC contributes to the homogenisation of specific risk constructions worldwide, which is currently mostly informed by Western epistemology, but as such doesn't do justice to the pluriform interpretations and interests related to climate change. I will argue that this leads to specific forms of epistemic injustice for Māori people, specifically in their capacity to relate to climate change risks based on mātauranga Māori as an Indigenous epistemology. While the IPCC currently plays an important role in the perpetuation of specific forms of epistemic injustice, they could contribute to epistemic justice by explicating how Western epistemology currently informs their constructions of climate change risk. This will allow people working with a different epistemological background, such as mātauranga Māori, to critically engage with their construction of climate change risks.

Keywords: IPCC; Risk construction; Epistemic injustice; mātauranga Māori

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Introduction

While issues of injustice can sometimes appear abstract and overwhelming, they eventually always relate to specific contexts in which people live and engage with each other and their environment. I therefore want to begin this introduction, by describing one particular context: the Waikato river in Aotearoa/New Zealand. The Waikato river is the longest river in Aotearoa/New Zealand, and is a vital source for many people living in its proximity, but especially for local tribe identity (Muru-Lanning, 2012: 134; 2016: 32). It has also been the source of controversy, however, as the relationship Māori people have had with the river, has been disrupted by non-Indigenous settlers in the area. Now, the river is “adversely impacted by fertilisers used on farmlands, the wastewater from several urban areas and major industries, and the turbines of eight hydro-electric power stations” (Muru-Lanning, 2016: 32, see also Van Meijl, 2015: 219). According to Māori, dividing the river with dams and hydro-electric power stations harms the integrity of the river, but the construction of these power stations has been defended by non-Māori under the guise of sustainability. By non-Māori, the river is seen as a ‘sustainable resource’ providing clean, renewable energy (Muru-Lanning, 2016: 49; 66; 112).

The Waikato river is exemplary for different ways of engaging with our ecological surroundings. While Māori – as described by Muru-Lanning – emphasise the integrity of the river itself, the ecosystems that depend on it and the responsibility and care that people have towards the river, non-Māori have acted based on an understanding of utilising the river, describing it as a commodifiable resource, that can be used for the purpose of sustainable consumption (Muru-Lanning, 2016: 112; Van Meijl, 2015: 220). Both refer to sustainable ways of engaging with the river, but the different understandings of the river lead to different understandings of sustainability and, crucially, *how to achieve sustainability*.

Yet it is often this second understanding sustainability and engaging with our ecological surrounding that is dominant in discussions on climate change. The threatening adverse impact of climate change requires us to use our resources more efficiently, so that our consumption and lifestyle have less detrimental impact on our ecological surroundings (Ekardt, 2020: 12ff.). While there is a plethora of research on ways to understand climate change and sustainability, and ways to prevent or adapt to ecological loss, this seldomly

relates to Indigenous knowledge (Smith & Sharp, 2012: 469; Ford et al., 2016: 350). Even when Indigenous people are involved in research on climate change (or adaptation and mitigation strategies), their testimonies receive different epistemic treatment compared to ‘expert’ witnesses (Townsend & Townsend, 2021: 149, see also Cameron, 2021: 2). Ford et al. (2016: 349) argue that the way in which climate change science is structured is determinative for ways of engaging with ecology and sustainability. The systematic exclusion of Indigenous knowledge in climate change science will often lead to the exclusion of Indigenous understandings of engaging with ecological surroundings, and thus for adaptation or mitigation strategies related to climate change (Goldman et al., 2018: 6; Byskov & Hyams, 2022: 613). Indigenous scholar Kyle Whyte argues that the disruption of Indigenous ways of engaging with ecological surroundings, illustrated by the construction of hydro-electric power stations in the Waikato river above, represent “profound epistemic, ontological, cosmological violence” (Whyte, 2018a: 125), that he directly relates to the perpetuation of colonial power relations between Indigenous and non-Indigenous people (2015: 3). In this thesis, I will focus on the epistemic dimension of these (power) relations.

Criticism on the structure of science and climate change knowledge is especially relevant for the *Intergovernmental Panel on Climate Change* (IPCC). This scientific bureau was founded in 1988 by United Nations and World Meteorological Organisation, specifically with the aim to provide univocal, scientific information on climate change, both in its causes and its impact (IPCC, 2022d; Agrawala, 1998a: 615). The goal of the IPCC is to provide “an overview of the state of knowledge on the science of climate change”, to inform the private sector and public domain, but especially to inform policy makers and governments worldwide (IPCC, 2014: vii; 36). This is achieved by assessing the physical nature of climate change, risks associated with these changes, and strategies for mitigation of and adaptation to climate change (see IPCC, 2014). This knowledge is used by policy makers worldwide, with both local and global application. As such, the IPCC can be seen as a global authority on climate change science (Hulme & Mahony, 2010: 713; Provost, 2019: 509). To a large extent, they determine how we understand the risks climate change and ways to deal with those risks.

The IPCC thus plays an important role in structuring climate change knowledge. At the same time, it is argued that not all forms of knowledge on climate change receive the same epistemic treatment. In this thesis, I will argue that this can be understood as a form of epistemic injustice. Epistemic injustice has been defined by Miranda Fricker as “a wrong done to someone specifically in their capacity as a knower” (2007: 1). This type of injustice can manifest itself in many different ways. In this thesis, I will explore which forms of

epistemic injustice are relevant for the IPCC in relation to Indigenous knowledge, but more specifically in relation to Māori (I will elaborate on this specification in §1.1). As an authoritative scientific institution on the way we understand climate change risks, the IPCC can play an important role in epistemic *injustice*, but can also contribute to epistemic *justice*. The research question of this thesis is therefore as follows:

How do global climate change risks as constructed by the IPCC contribute to epistemic (in)justice for Māori epistemology?

To answer this question, I will answer the following sub-questions:

- I. How are global climate change risks constructed by IPCC?
- II. Which forms of epistemic injustice for Māori epistemology are relevant for the IPCC?
- III. How can the IPCC overcome epistemic injustice for Māori epistemology?

By answering these questions, I aim to contribute to a richer understanding of the way in which the construction of climate change risks relates to epistemic injustice for Māori epistemology. Additionally, I hope to provide some solutions that the IPCC could implement to overcome epistemic injustice. In this sense, this thesis is also aimed to provide a clearer understanding of how justice could be achieved for Māori epistemology.

1.1 RELEVANCE AND LIMITATIONS

In this thesis, I will focus on epistemic injustice for Māori epistemology and Indigenous Knowledge more generally. As a non-Indigenous person, I acknowledge that my perspective will be limited; my representation of Indigenous people will always remain an outsider perspective. Yet some further clarifications of what is meant with *Indigenous* or *Māori* will benefit the clarity of my argumentation throughout this thesis. In an effort to do justice to the self-understanding of Indigenous people, I will refer to scholars who identify, in the texts I refer to or elsewhere, as Indigenous when outlining terms such as Māori, Indigenous or Indigenous knowledge.

Indigenous identity relates to many different people and communities around the globe, with a great variety in culture, language, worldview and relations with non-Indigenous communities inhabiting the same spaces. As Indigenous academic Hilary Weaver (2001: 240) has pointed out, trying to do justice to all these different people, would do justice to none. I

therefore focus on Māori people and mātauranga Māori.¹ However, even within this collective identity, there are diverse and complex ways of (self-)identification (McIntosh, 2005a: 38; Greaves, Houkamau & Sibley, 2015: 542). When describing her Māori identity, Tracey McIntosh writes: “To be Maori is to be part of a collective but *heterogenous* identity, one that is enduring but ever in a state of flux” (McIntosh, 2001: 143, emphasis added). Tiatia-Seath, Tupou, and Fookes (2020: 400) add that Western science tends to “reductively categorize [pacific peoples’] diversity, and marginalize their understandings of themselves.” Without wanting to undermine the complexity and diversity of Māori identity, when speaking of Māori people, I refer to “anyone who self-identifies as Māori and/or has an ancestor who was Māori” (Houkamau & Sibley, 2010: 8), following an internationally practiced right to self-identification (Corntassel, 2003: 75).

As diverse and complex as Māori identity might be, so is the knowledge system related to this identity. While I will give a more substantial description of mātauranga Māori in §3.2, some preliminary remarks can be made. Mātauranga Māori can be defined as “the body of knowledge originating from Māori ancestors, including Māori world view and perspectives, Māori creativity and cultural practices” (Moorfield, 2011). Like many other forms of Indigenous knowledge, mātauranga Māori has qualities that are different from Western scientific knowledge. For example, in contrast to Western scientific knowledge, Indigenous knowledge is often described as holistic and interdependent, thus not constrained by disciplinary barriers, as contextual, and as focusing on relationships between human and nonhuman beings (Hutchings, 2014: 446; Broughton & McBreen, 2015: 84; Whyte, 2018b: 157; Jackson & Mercier, 2020: 4).

While I will discuss the relation between Westernised science and mātauranga Māori in chapter 3, it is important to note here that, despite the great diversity in culture, languages and world view, Indigenous communities are confronted in similar ways with the power dynamics enforced by the reality of settler colonialism (Alfred, 2015: 3; see also Semali & Kincheloe, 1999: 16-17). The enforcement of certain constructions of climate change risks, leaving out Indigenous environmental knowledge can be seen one of the manifestations of this power dynamic of colonialism (Whyte, 2015: 3; 2020: 1). I will therefore refer to other explorations of Indigenous Knowledge where relevant, based on the conviction that other

¹ In analogy with many Māori academics writing about mātauranga Māori, I will refrain from using in-text translations of Māori words. While I realise that this might break up the ‘flow’ of the text, the harm of translation and the empowering quality of the use of Māori language for Māori (which will also be discussed in §3.2), outweighs the consideration of flow. A list of translations can be found in an appendix.

forms of Indigenous Knowledge might encounter similar dynamics of oppression and marginalisation in relation to Westernised science.

While these power dynamics and the way they might relate to epistemic (in)justice can best be described by those experiencing them directly, i.e. Indigenous academics, there is an important role to play by non-Indigenous people and academics. The *acknowledgement* of power dynamics is not enough, as long as the privileged (in this case non-Indigenous people) refrain from “having to take on the hard work of doing anything that will change the underlying [...] structures of domination that secure Indigenous disempowerment” (Whyte, 2018a: 139, see also Pinn, 2017: 78). This thesis can be seen as an effort to further understand how one of the most influential institutions in the construction of climate change risks – the IPCC – relates to forms of epistemic injustice, but also how this institution could challenge this type of injustice, and thus contribute to more epistemic justice for Indigenous people in general, but Māori in particular.

Additionally to this societal relevance, this thesis is theoretically relevant, as I hope to provide a richer understanding of the way in which the (colonial) power of climate change risk constructions (as suggested by Whyte) relates to competing epistemologies. While there has been research on the way in which the IPCC or their construction of climate change risks harms Indigenous communities and their way of relating to nature, this often overlooks the power dynamic between competing epistemologies. I will therefore relate insights on the power relation between different epistemologies (specifically Western epistemology and Māori epistemology) to the way the IPCC operates as an institution. The theory of epistemic injustice is particularly helpful to focus on harm done to people in relation to their epistemology (see also §1.2). At the same time, epistemic injustice theory could benefit from a more systematic approach that incorporates institutional dimensions and power dynamics (Giladi, 2018: 145; 153). Focussing on a particular institution thus also provides a richer understanding in the way this theory could benefit institutional justice.

The topic that is central in this thesis directly relates to some of the key concepts of Humanistic Studies. The issue described by Indigenous people above directly relates to their ability to live according to *their own notions* of a good and meaningful life, based on *their own worldview*. The effect of the current construction of risks is described as having a disempowering effect, and a critical analysis of these constructions of risks can therefore be seen as a way of understanding the necessary conditions for living a meaningful life. By contributing to institutional solutions for the IPCC, I aim to contribute to the development of a more just institution, and ultimately society (see University of Humanistic Studies, 2023).

1.2 METHOD AND STRUCTURE OF THIS THESIS

The aims I have formulated above indicate that this thesis relates to both theoretical and practical perspectives on the way constructions of climate change risks relate to epistemic injustice, and that I will focus on both (current) dynamics of epistemic *injustice*, as well as (potential) forms of epistemic *justice*. The research questions are thus designed to I) give insight into current practices of climate change risks constructions, II) give an ethical analysis of these practices, by referring to the theory of epistemic injustice, and III) using these theoretical insights to provide practical solutions.

The focus on current practices of climate change risk constructions will be central in chapter 2. To give insight into the way the IPCC might construct climate change risks, I will use a variety of materials that the IPCC publishes. To begin with, their most recent synthesis report on the assessment of climate change risks (IPCC, 2014) directly reveals the way in which they construct risks associated with climate change. Additionally, insight can be gained from other publications of the IPCC, such as documents in which regulatory principles are disclosed, (IPCC, 2012; 2013a; 2013b), or their webpages about the history and structure of the organisation (IPCC, 2022a; 2022b; 2022c; 2022d).

However, in order to abstract relevant information from these rich and complex publications, a theoretical lens can be helpful. I have found such a lens in the work of German sociologist Ulrich Beck. In one of his most influential works *Risk Society – Towards a New Modernity* (1992) he gives an extensive analysis of what he considers a new modernity and the role risks play in this new modernity. This work therefore provides some theory-based focus in the abundance of empirical information related to the IPCC. However, as his work represents his observations on what was just beginning to take shape in the 1980's and 1990's (see Beck, 1992: 9), I will supplement his observations with those made by other academics that have analysed risks and the way the IPCC has since its establishment in 1988.

Despite its advantages, Beck's theoretical lens is less suitable to address the justice issues that are central in my thesis. To answer the second research question, I thus turn to the theory of epistemic injustice, which will be the central topic of chapter 3. In this chapter, I refer to Miranda Fricker, who has coined the term 'epistemic injustice', and has provided an extensive theory of this concept in her book *Epistemic Injustice – Power and the Ethics of Knowing* (2007). However, Fricker's analysis mainly focuses on individual, transactional forms of injustice, and is thus not always applicable to the IPCC. I therefore supplement her work with a more systematic understanding of epistemic injustice, that I have found in the

work of academics such as Anderson (2012), Grasswick (2017), and Medina (2011; 2017). Most importantly, however, chapter 3 is aimed to provide insight into epistemic injustice *for Māori epistemology*. I will thus supplement and adjust the theory of epistemic injustice with the work of Māori academics, both in their description of Māori epistemology, and in their descriptions and experiences of injustice related to the use of their epistemology (see also §1.2).

Finally, chapter 3 is aimed to provide practical solutions for the IPCC. I will use Medina's contributions, which will prove to be particularly focused on ways to overcome epistemic injustice, to explore three different ways in which the IPCC might contribute to epistemic justice for Māori epistemology. The viability of these different approaches will be evaluated based on both practical considerations and limitations as presented by the IPCC, as well as normative considerations and limitations as expressed by Māori academics. In this last chapter I thus bring together theoretical insights gained from epistemic injustice as an ethical theory, and empirical findings related to the reality of the work done by the IPCC. With this dual focus, I aim to propose solutions that are useful in a non-ideal world.

Risk Construction in the Climate Change Debate

In the introduction, I have suggested that the current global construction of climate change risks relate to specific forms of epistemic injustice for Māori epistemology. However, to understand how constructions of risk might relate to any form of injustice, and furthermore how the IPCC might overcome these injustices, it is important to understand how exactly climate change risks are constructed or why these risks should be seen as constructions at all, and which role the IPCC currently plays in these constructions. This chapter will thus serve to answer the following research question: how are global climate change risks constructed by the IPCC?

To answer this question, I will mainly refer to Beck's theory of risk societies, which he has developed in his book *Risk Society – Towards a New Modernity*. I will argue that, while Beck's theory remains rather abstract, much of his notions are useful to analyse the IPCC as an institution, and to understand how their work contributes to a specific form of risk construction. Specifically the normative implications of selection and prioritisation in constructions of risks, and the homogenising effect on knowledge of these constructions will be central in this chapter. This will then serve as a starting point to further analyse some of the ethical issues underlying the constructions of risks in the chapter 3, as well as possible solutions to those ethical issues in chapter 4.

2.1 RISK SOCIETY AND SCIENCE – BECK'S RISK SOCIETY AS FRAMEWORK

To an important extent, climate change is not understood by the IPCC as some inevitable but *neutral* reality that we are witnessing, but as a development that might negatively influence many aspects of our lives. Additionally, this development is seen as something that can be influenced, so that its negative impact can be managed. The IPCC therefore frames their research on climate change in terms of *risks*, and ways of managing these risks via adaptation and mitigating strategies (IPCC, 2014: vii). While risks, in the common understanding of the word, are nothing new, Beck argues our understanding of risks has drastically changed in modern societies. Not only the nature of modern risks, but also the role they play in society and the way we attempt to manage them are different than in pre-modern societies. Before describing how this might apply to the IPCC, I will first elaborate on Beck's understanding of

risks and risk construction, which will then serve as a framework to analyse the IPCC.

Beck argues that, unlike old dangers, modern risks² escape perception (1992a: 21). They can no longer be recognised with the senses, like old dangers could have, but instead are localised in the sphere of physical and chemical formulas. This includes hazards related to toxins and pollution in the air, water and food, but above all the nuclear threat of radioactivity. These hazards require “the *sensory organs of science* – theories, experiments, measuring instruments – in order to become visible or interpretable as hazards at all” (1992a: 27, emphasis added; see also 21-22). One could think of toxins in food as a result of soil pollution, that cannot be tasted, but must be made knowledgeable through scientific testing, or the rising levels of CO² that cannot be felt, but are measured by scientists. We thus need science, and most notably the natural sciences, to be made aware of modern risks (see Beck, 1992a: 26; 1992b: 107).

Another difference between old time dangers and modern risks, is that modern risks are more complex than old dangers, in several ways. First of all, old time dangers relate to personal risks; something could be dangerous for specific persons in specific contexts. Such dangers could then be monitored and one could insure oneself against these dangers. Beck – fittingly – mentions the dangers that colonizers or ‘explorers’ faced (Beck, 1992a: 21). Sailing oceans was of course a risky endeavour, and sailors therefore willingly accepted a risk when setting sail, but this concerned *personal* risks such as drowning or dying of illness. They could be traced back to specific people involved, and related to specific actions. Furthermore, through life insurance, the consequences of such risks could be contained; if not for the people sailing, then for those who they left behind.

This is no longer the case with modern risks. Unlike old dangers, modern risks cannot be contained, so that only limited people experience them. Beck gives examples such as air pollution or nuclear disasters. The long term consequences of these will impact everyone and even have the potential to endanger all forms of life (1992a: 22). If, for example, as a consequence of a human induced greenhouse effect, the global temperature will rise to unliveable levels, no one could escape. Or, perhaps more imaginable, if rising temperatures lead to systematic failed crops and loss of bio-diversity at sea, there is no institution that could prevent world famine or insure against its consequences. Surely, those with money will have a more privileged position, but eventually the consequences will be felt by all. Modern risks are

² Beck uses a variety of terms, such as dangers, hazards or risks; sometimes interchangeably, sometimes to signify differences between these phenomena. For reasons of clarity, I will refer to the modern risks as *risks*, and older phenomena as old time dangers.

therefore a global phenomenon, with the potential to endanger all forms of life, trespassing national borders and overarching generations (1992a: 22; 36).

Secondly, modern risks are more complex, because they are more closely related to decision-making. Unlike natural disasters or old dangers, Beck argues that modern risks are the direct consequence of modernity itself, because they are a side-effect of certain modern developments. Think of the emissions of greenhouse gases that industrialisation has caused. As such, modern risks are caused by decisions to pursue certain developments in modernity. This has led to a situation in which “the social institutions [...] have been confronted with the historically unprecedented possibility of the destruction through decision-making of all life on this planet” (Beck, 1992b: 101). This forces us to reflect on modernisation itself. We can no longer only occupy ourselves with relieving mankind of traditional constraints (such as old dangers), but have to reflect on “problems resulting from techno-economic development itself. [Thus] modernization is becoming *reflexive*; it is becoming its own theme” (Beck, 1992a: 19).

These decisions with potentially destructive consequences are never the result of the decisions of one individual, however, but rather of entire organisations and political groups (Beck, 1992b: 98). Beck refers to this as the systematic interdependence of agents in business, agriculture, the law and politics (Beck, 1992a: 32). The pollution of soil, for example, is technically speaking the result of farmers using chemical feed and fertiliser. But it is because of a market mechanism of high (and speedy) demand that this is needed, because of research in agricultural science that this is possible, and because of politicians controlling permissible levels of toxins that this is allowed.

This interdependency of actors has had the side effect that rules of allocation and responsibility have broken down. As decisions are not made by one actor, but as a collaboration between law, science, administration, industry and politics, causality and guilt for certain consequences become unclear (Beck, 1992a: 32-33; 1996: 12). Take the example of greenhouse gas emissions. These emissions are not an isolated problem, but rather a global phenomenon. But who can be held accountable for it? Is it the individuals who emit these gases, for example by driving a car? Or should the politicians be held responsible for not taking enough political action to prevent emissions? Or is indeed the industry that contributes to the emissions, for example the car industry that clearly has an interest in the prolonged and extensive use of cars and fails to produce ‘cleaner’ cars? As the complexity of such interdependent webs increases, so does the complicity in certain outcomes. The logic of allocation and causal responsibility for past actions therefore fail to assign personal guilt and

thus responsibility for current damage (Beck, 1992a: 33).

Modern risks are thus highly complex, because of their increased magnitude, their intertwinement with decision-making about development, and the web of interdependent actors that are involved in this decision-making. This growing complexity has made risks more and more incalculable so that "... a vacuum of institutionalized political competence, or even of ideas about it, emerges" (Beck, 1992a: 48; see also 171). Yet science has aimed to provide more sense of security, by focusing on estimations of risks, based on statistics and formulae. The focus thus shifts to the calculus of risk *in the future*; "events that have not yet occurred become the object of current action – prevention, compensation or precautionary after-care" (Beck, 1992b: 100). Risk as a *projected* danger in the future, based on estimations of scientists, thus becomes the impetus for action in the present (Beck, 1992a: 34). This gives another important role to science. We not only need science to determine hazards in the present, as mentioned earlier, but also to prognose risks in the future. The prognosis of global warming in the future and the risks associated with it, for example, influences current climate policy and political action.

Science thus has a crucial role to play in risk societies, as they determine risks both in the present and in the future. While thoughts about how risks are to be handled politically becomes less evident, the need for (scientific) knowledge has been given more and more importance. Risk societies are increasingly dependent on science and research to structure knowledge and provide estimations of future risks (see also 1992a: 46). As such, experts and scientists are expected to understand risks better than anyone else and are given the lead role in defining agendas concerning risk management (Lash & Wynne, 1992: 4). Collectively, they therefore have considerable defining power over the "scale, degree and urgency of risks" (Beck, 1992a: 46). Additionally, they have defining power over what such a prognosis of risks would require and which (political) actions would be appropriate. Beck even goes as far as to say that scientists and engineers have become a binding authority on risks – "binding for law and politics" – and have thus gotten a monopoly in the diagnosis of hazards (Beck, 1992b: 107). In this sense, the vacuum of institutionalised political competence, once created by the growing complexity of risks, has since been filled by science.

Beck thus gives a detailed analysis of the way risks, and the (scientific) management of risks, play a role in modern societies. Before elaborating on further implications of Beck's framework, and especially on his perspective on the *construction* of risk, I want to draw some parallels between Beck's framework and the IPCC. I will argue that the role the IPCC plays in

relation to climate change science can be understood as an example of the way that science fills the ‘vacuum of political competence’, as described by Beck.

2.2 RISK SOCIETY AND SCIENCE – THE IPCC AS CASE

Before drawing parallels with Beck’s framework, more needs to be said about the IPCC as an institution and how it operates. As I have mentioned in the introduction, the IPCC aims to provide “an overview of the state of knowledge on the science of climate change” (IPCC, 2014: 36). It has specifically been assigned with this task by United Nations (U.N.) and World Meteorological Organisation (WMO), who wanted to establish a scientific institution that answers to all member-governments of the U.N. – hence the establishment of an *Intergovernmental Panel on Climate Change* (Agrawala, 1998a: 615; Provost, 2019: 516). Since its establishment in 1988, the IPCC has published 5 synthesis reports (and is currently working on the 6th), in which the physical basis for climate change, possible vulnerabilities and adaptation strategies, as well as possible mitigation strategies are analysed (IPCC, 2022b; Provost, 2019: 509).

To what extent, then, does the IPCC perform the role that Beck ascribes to science in modern risk societies? To begin with, one can see parallels between the type of risks the IPCC researches and the description of modern risks given by Beck – who himself refers to climate change or the ‘ecological crisis’ as one of the modern risks (e.g. 1992a: 162; 2011: 1349). Firstly, climate change is considered a global phenomenon that affects everyone (e.g. IPCC, 2014: 7-8; 13; 16). If temperatures rise, they rise for everyone, not just the poor. If biodiversity is lost, they are lost to everyone, not just for the poor. When thought of in extremes, climate change has the potential to threaten all life on earth, as is characteristic of modern risks. Furthermore, it seems clearer and clearer that the current climate change, and especially the speeds with which it is occurring, is caused by human action – and thus human decision-making (e.g. IPCC, 2014: 2; 4; 8-10; 45-47). Rising temperatures, and all its consequences, are almost certainly caused by anthropogenic greenhouse gas emissions; emissions that are only possible because of industrialisation and thus a consequence of modernity. Additionally, the IPCC is both concerned with the prognosis of current changes in climate and ecosystems (e.g. IPCC, 2014: 2-3; 6-7; 40-54), as well as with prognoses and estimations of future changes in climate and the risks associated with those changes (e.g. IPCC, 2014: 8-16; 55-74). Finally, both the prognosis of current climate change and the estimation of future climate change and its impact are highly technical and require the ‘sensory organs of science’, mostly offered by the natural sciences. The acidification of

oceans or the levels of greenhouse gasses in our atmosphere (see IPCC, 2014: 40-44) cannot be felt or sensed by any layman, but require scientific tools to be made cognisable. Similarly, scientific methods are required to estimate future global rise in sea levels or temperatures or increased likelihood of extreme weather events (see IPCC, 2014: 56ff.). In this way, climate change and the risks associated with it can be understood as *modern risks* as described by Beck, and the IPCC can therefore be understood as a scientific institution concerned with research of such modern risks.

But also when looking at the IPCC as an institution and its role in relation to policy, one can see the parallels between Beck's framework of risk society and the IPCC. As mentioned in the introduction, the IPCC was founded by the United Nations and the World Meteorological Organisation to provide univocal scientific information about climate change. This was tightly related to a political interest in, or even *need* for more scientific knowledge on climate change. While several agencies had carried out climate change research before the foundation of the IPCC, the U.S. government at the time argued that the science on climate change was insufficient to justify political action. They proposed that an intergovernmental panel was needed to assess climate change with more certainty (Provost, 2019: 516, see also Agrawala, 1998a). As such, the IPCC was assigned with the task to define the "scale, degree and urgency" of climate change as a risk, which would then provide the needed information for political action (see Agrawala 1998a: 616). Only on the basis of this type of scientific knowledge was policy justified – or so seems to be the reasoning of the U.S. government of that time. This illustrates the movement described by Beck where (some of) the binding authority to define the nature and scale of risks, as well as the way such risks should be managed is moved to scientists. One could thus say, to draw parallels with Beck's theory, that the IPCC has filled the vacuum of political competence to adequately assess the risks of climate change and appropriate political options.

The IPCC thus fulfils the role that Beck ascribes to science in risk societies; the IPCC is concerned with scientific knowledge on the risks of climate change as global phenomenon, that is the result of human conduct in modern societies; the reality *and* severity of such risks cannot be sensed by the lay man, but is specifically assigned by politicians to the IPCC *as a scientific bureau*. However, I have also briefly mentioned that Beck argues that scientists and experts have some defining power, a power that has also been ascribed to the IPCC (see Introduction). I will now turn to the way the IPCC relates to the constructions of climate change risks.

2.3 THE CONSTRUCTION OF RISKS

Beck argues that risks have come to play a central role in modern society. However, his theory also provides a framework for understanding *how* such risks play a role in modern societies. As mentioned above, he argues that modern risks escape our senses, and must thus be made aware to us by experts. Consequently, experts have the power to bring risks to our attention and can present these risks as something that needs scientific monitoring, while other developments or side-effects of modernity remain latent. Something that we thought was harmless one day, can become a risk to our health the next day, if presented as such (Beck, 1992a: 54). Think of something as ordinary as sunlight. Sunlight was once thought of as harmless, until experts discovered that too much exposure to sunlight could lead to higher risks of skin cancer. It is because experts have brought causal relations between exposure to sunlight and the occurrence of skin cancer to our attention, that we perceive this risk. Beck therefore argues that risks should not be thought of as a *fact* that experts can *discover*, but rather as something *mediated* to us (Beck, 1996: 4).

An important part of the scientific work, is the selection of facts and information that they bring to our attention. Scientific findings have become hyper-complex, as a result of increased specialisation of scientists. While these hyper-complex findings might not necessarily contradict each other, they do not always complement each other, either, meaning that some coherence needs to be constructed (Beck, 1992a: 157; 167). This will require presenting some pieces of information as more relevant, while leaving out other pieces. Beck therefore argues that behind ‘neutral’ figures, information and explanations, experts face decision that add value judgements to the so-called unbiased presentation of facts; “*Which* interests [experts] select, however, on *whom* or *what* they project causes, *how* they interpret the problems of society, *what sort* of potential solutions they bring into view – these are anything but neutral decisions” (Beck, 1992a: 174). Risk constructions are therefore always related to the *normative* perspectives (Beck, 1992a: 27). To say that something is too much of a risk, or that certain risks are acceptable (or even unavoidable), is to say something about the way we want to live. It presumes a normative horizon of what a good life is, of what cannot or should not be lost:

Behind all the objectifications, sooner or later the question of *acceptance* arises and with it anew the old question: *how do we wish to live?* What is the human quality of humankind, the natural quality of nature which is to be preserved? (Beck, 1992a: 28)

Risk constructions are therefore not merely factual, but reveal something of a normative horizon. Beck argues that, in this sense, risks are somewhat like the negative image of a utopia (1992a: 28); they represent an ideal world and at the same time show us what kind of world we do not want to live in. For example, stating that rising temperatures pose a risk for biodiversity in the oceans is to say that loss of biodiversity in the oceans ought to be avoided. Even the most scientific constructions of risks are therefore never completely objective.

Similarly, and especially relevant for the IPCC, Beck argues that our understanding of nature and ecology are culturally constructed. The ecological destruction and the loss of nature have been the impetus for the political and scientific interest in global climate change as is expressed by the IPCC. However, what should be understood as *nature* often remains implicit. Beck, however, argues that what we consider to be *nature* – rather than culture, man-made, or unnatural – is culturally determined. Which parts of nature are to be saved or preserved, is thus also culturally determined and can therefore be disputed:

What is there, what creates such a political stir, are different forms of socialization and different symbolic mediations of nature (and the destruction of nature). It is these *cultural concepts* of nature, these opposing views of nature and their (national) cultural traditions which, behind the disputes among experts and the technical formulae and dangers, have a determining influence on ecological conflicts in Europe, as well as between Europe and ‘Third World’ countries and within those countries themselves (Beck, 1996: 3).

Both the narratives of risks and the implicit understanding of nature are thus culturally constructed, reflecting a selection of priority, of notions of what should be preserved and ultimately reflecting ideas of how we wish to live.

As already mentioned above, such choices are not neutral, but should be understood as normative choices. Beck suggests, however, that in risk societies both scientists and politicians will present risk constructions as established knowledge “which it would be the height of ignorance to ignore in practice” (Beck, 1992a: 164, see also 161). But, due to the hyper-complexity of scientific findings, practitioners and politicians are able to choose between groups of experts, so that political programmes can be decided by way of choosing experts; “by the choice of what expert representatives are included in the circle of advisers” (1992a: 173). *How* risk are constructed, and especially *who* was involved in the construction is thus determinative for our understanding of risks, which in turn has influence on politics and (climate change) policy. The construction of risk is not neutral, but political in itself. Yet this normative choice is not presented as such – a *normative* choice – but as an objective a-

ethical and a-political reference to science. As I have argued that the IPCC can be seen as an institution that fulfils the role that Beck assigns to science in his analysis of risk societies, it is worth looking into the way normativity plays a role in the work of the IPCC, and in their relation with policy.

2.4 POLICY RELEVANT, NOT POLICY PRESCRIPTIVE?

While the task of the IPCC has always been related to policy (see §2.2), this was initially based on the believe that science could function as objective input for policy (Beck & Mahony, 2018: 4). It was believed that science can inform policy, while remaining largely independent of politics (Provost, 2019: 516). The IPCC therefore stated that their work was “policy-relevant and yet policy-neutral, never policy-prescriptive” (IPCC, n.d., see also Provost, 2019: 517). However, over time, this has shifted more and more, as the recognition came that while research had provided considerable understanding of climate change, there was a need for solutions to tackle the identified problems. The role of the IPCC therefore shifted from identify problems, to providing possible solutions (Beck & Mahony, 2018: 6; Provost, 2019: 532). However, despite this shift, the IPCC persists that their research remains objective (IPCC, 2013a: 1; U. N. Framework Convention on Climate Change in Provost, 2019: 518). Similarly, Graham Provost argues that the shift to a solution-orientated approach should not stand in the way of the credibility of the IPCC as an objective input for policy. According to him, the IPCC does not provide clear cut solutions that policy makers can copy, but rather “comprehensively examines the costs and benefits of various pathways” (Provost, 2019: 532). When, after rigorous research, the costs and benefits of one pathway seem to outweigh other pathways, the IPCC should not obscure the optimal choice, according to Provost (2019: 533). From this point of view, the real political work – the weighing of alternatives and making normative choices – is still done by the politicians and policymakers.

Others have been more critical about the stance the IPCC has taken in relation to policy input. Kari de Pryck and Krystel Wanneau (2017: 3), for example, argue that the notion that objective scientific knowledge and normative politics as two separate spheres, is a simplistic, yet pervasive notion in most environmental or climate regimes. Based on this notion, it is assumed that (more) scientific knowledge will help overcome political disagreement and thus will eventually lead to political consensus and rational policy (S. Beck, 2011: 298-299). There has therefore been a tendency to “define problems so that they require scientific solutions, thereby converting political controversies into technical puzzles” (De Pryck & Wanneau, 2017: 204). This gives paramount importance to climate scientists as the

only people capable of solving such technical puzzles, but overshadows any underlying ideological debate that might be relevant for dealing with climate change (Ford et al., 2016: 351, Jasanoff, 2021: 3; 7). It has lead the former environment minister of India Jairam Ramesh to say that climate science is politics by other means (Jasanoff, 2021: 5-6).

Contrary to the linear notion described above but in line with Beck's theory, some critics of the IPCC have argued that the act of framing or constructing risks is in itself political. Ford et al. (2016), for example, argue that the assessing and reviewing of knowledge that the IPCC commits itself to requires decisions on "what research to include and exclude, how much space to allocate to each topic, a structure for framing knowledge and how to deal with conflicting arguments, as well as writing style and language" (Ford et al., 2016: 349). These are all decision that the IPCC makes in order to present a coherent narrative of climate change that is comprehensible for politicians and policy-makers. In this sense, the IPCC is responsible for the transformation of mere facts into a coherent understanding of causal relations about the climate and scenarios that we ought to avoid. The reports the IPCC presents should therefore be seen as *constructions* of risks, rather than objective representations of the empirical world, in which certain hazards and options for the management of these hazards are highlighted over others.

Furthermore, by shifting its focus to possible solutions for climate change, the IPCC is implicitly attempting to answer the 'old question of how we wish to live' (Beck, 1992a: 28), thereby entering a normative debate. According to the IPCC, their aim is to "prepare a comprehensive review *and recommendations* with respect to the state of knowledge of the science of climate change (IPCC, 2022c, emphasis added). In this role, they play a crucial role in the agenda setting, both for future research as for future policy. The IPCC can be seen as the "scientific trigger that led to the FCCC and the Kyoto Protocol" (S. Beck, 2011: 298), and has since had great influence on the Paris Agreement and the ambition to limit global warming to 1.5 °C, and the implementation of this agreement (Provost, 2019: 532ff.). But also in relation to future research does the IPCC have a determinative power. While the IPCC states that it does not conduct research of its own (see IPCC, 2022d), De Pryck and Wanneau point out that, at least indirectly, the IPCC "structures the scientific production by identifying knowledge gaps and organizing research around deadlines to produce inputs that aim to feed into the IPCC" (De Pryck & Wanneau, 2017: 205, see also Agrawala, 1998b: 631).

The IPCC therefore has considerate influence on the global construction of climate change risks, but maintains the position that their work is objective, scientific input for policy, rather than policy-prescriptive. The tendency described in more abstract terms by Beck, where

normative issues are solved by reference to a-ethical or non-ideological scientific results (science untainted by politics), has thus also been described in direct relation to the IPCC. However, to answer the question how global climate change risks are constructed by the IPCC, one further phenomenon needs to be explained. Above, I have noted that Beck argues that constructions of climate change risks are related to (cultural) understandings of nature and ecology. Similarly, ideas on how we wish to live, and thus how policy should be shaped will be culturally determined. Who is involved in the constructions of risks is therefore relevant for the outline of those constructions. However, critics of the IPCC have noted that the IPCC has not only played a role in turning normative debates on how we wish to live in techno-managerial puzzles that scientists can solve, but has also contributed to the homogenisation of climate change knowledge; I will turn to this issue in the next paragraph.

2.5 HOMOGENISATION OF CLIMATE CHANGE KNOWLEDGE

To some extent, the idea that who is involved in the construction of risks – or at least in the ‘construction’ of scientific reports, is relevant for the outcome of those constructions, does not seem alien to the IPCC. As a global institution that answers to all its member governments, the representation of these governments has always been an important issue. The IPCC therefore aims to be as transparent as possible when it comes to the diversity of the writing teams. In a document describing the principles governing IPCC work (IPCC, 2012a), they state that diversity concerning authors and review editors should reflect “a range of scientific, technical and socio-economic views and expertise; geographical representation [of developing countries, developed countries and countries with economy in transition]; a mixture of experts with and without previous experience in IPCC; and gender balance” (IPCC, 2013b: 5-6). This ambition for geographical representation is repeated in relation to selecting reviewers (2013b: 6), IPCC workshops and expert meetings (2013b: 12) and co-sponsoring workshops not organised by the IPCC (2013b: 13). Such diversity principles influence the way writing teams are put together. For example, coordinating lead authors, who are responsible for the process and coordination of the various report-chapters, usually work in teams of two; one person from a developing country and one person from a developed country,³ as to minimise bias. Additionally, the IPCC publishes a full list of the core writing team and review members

³ I use the terms ‘developing countries’ and ‘developed countries’ to echo the words of the IPCC, but recognise that the use of such phrasing can be considered harmful or limiting.

online,⁴ which discloses the origin and citizenship of all members.⁵

Such regulations would only make sense, if one believes, at least to some extent, that who takes part in the construction of risk has influence on the validity of that construction. After all, if scientific findings on climate change risk would always be universal, it would be completely irrelevant where authors and review editors are from. A writing team completely made up of authors from Zimbabwe would come to the same conclusions as a writing team completely made up of authors from Nepal. By instituting a principle of geographical diversity, the IPCC thus seems to recognise the value of diversity and representation in their work.

At the same time, however, such diversity is not necessarily presented as such in the reports of the IPCC. The IPCC strives towards consensus, both in their governing principles, and in their scientific reports (IPCC, 2013a: 2; 2014: 2, see also Hulme & Mahony, 2010: 710ff.). However, claims of consensus can sometimes be rather misleading. As one of, if not the biggest global authority on climate change science, with scientists from all over the world working on the reports, claims of consensus can be misunderstood as being reached amongst all those experts. However, Hulme and Mahony (2010: 711) note that interactions in the writing teams are based on expertise, so that experts with different expertise will work of different paragraphs and chapters. Realistically, consensus judgements are reached by only a few dozen experts in the specific field they have been writing about. Ford et al. (2016: 351) argue that this focus on consensus, together with the global nature of the IPCC's work, leads to a *homogenisation of knowledge*, leaving out dissenting or marginalised voices. Because the IPCC aims to represent a coherent construction that is relevant for a wide variety of policy makers (see also Hulme & Mahony, 2010: 711), policy makers all over the world refer to the same construction of climate change risk. Even if different constructions of climate change risk might be relevant on a more local level, highlighting different interests, values, conceptions of nature or notions of how we wish to live, the IPCC's homogenic construction of risk has gained a hegemonic position globally (Mayer & Arndt, 2009: 76ff.; Jasanoff, 2021: 5).

It would be unfair to state that the IPCC pushes consensus despite obvious dissenting findings. The IPCC aims to be transparent about possible uncertainty of their statements, by

⁴ <https://archive.ipcc.ch/report/authors/report.authors.php?q=38&p=>, viewed 2-11-'22

⁵ For the current, sixth cycle, the principles described above have led to writing teams (coordinating lead authors, lead authors and review editors) made up of 721 experts from 90 different countries. Of these experts, 44% come from developing countries and countries with economies in transition – this was 37% in the previous assessment cycle (see also IPCC, 2018).

rating statements with a variety of uncertainty levels (see IPCC, 2014: 2, for an overview). This suggests the IPCC does not aim to present their construction of climate change risks as uncontested knowledge. Yet such transparency about uncertainty is not always straightforward. Hulme and Mahony (2010: 711) note that experts from different epistemic traditions deal with uncertainty in different ways. This could lead to confusion and misunderstanding about uncertainty, even amongst the experts themselves. But also, or especially, can the communication of uncertainty lead to confusion amongst lay people, who might understand such statements differently than intended by the experts (Hulme & Mahony, 2010: 712). Specifically in relation to greenhouse gas emission scenarios provided by the IPCC, Schenk and Lensink (2007) therefore suggest that communication about uncertainty be improved, by making statements more explicitly normative when communicating with non-experts – e.g. in the summary for policy-makers.

Thus, as a global authority on climate change knowledge, the IPCC has major influence on the global construction of climate change risks, which through its emphasis on consensus can be misunderstood as uncontested global knowledge. Ford et al. (2016) argue that this is especially detrimental for Indigenous Peoples, as their vulnerabilities and interests can differ considerably from non-Indigenous peoples living in the same region. Overlooking these differs interest and vulnerabilities also means overlooking

...the active and complex role of indigenous communities, organizations and governments in responding to climate change, building on significant adaptive capacities and societal strengths and missing important worldviews and ethical ways of engaging with and understanding the natural world (Ford et al., 2016: 351).

As Beck pointed out, even the most scientific constructions of risks related to climate change still relate to questions of acceptance, of cultural interpretation of nature and (un)acceptable losses of nature, and ultimately on the question how we wish to live. An underrepresentation of an indigenous perspective in the construction of risk could thus lead to further injustices related to Indigenous ways of living. The consequences of homogenising knowledge thus reach further than just the realm of scientific reports. While the IPCC aims for the geographical representation, this has been represented as representation of nation-states. This does not do justice to power dynamics between different demographic groups within nation-states, and in particular it does not do justice to Indigenous people or Indigenous Knowledge. This will be the focus of my next chapter.

2.6 CONCLUSION

We can thus conclude that the IPCC has tremendous influence on the global construction of climate change risks. Following Beck's framework, I have argued that the assessment of (future) risks have come to play an important role in modern societies, and that such assessments are often presented as something that requires scientific expertise. Specifically in relation to climate change knowledge, this need for scientific expertise is answered by the IPCC; they are the global authority on climate change knowledge and influence climate change policy worldwide. Beck points out, however, that climate change risks are *constructed*, reflecting choices on priority and relevance of information, on how to interpret societal problems and viable solutions, how to interpret nature or ecology and which (future) changes are acceptable or not.

To answer the question how global climate change risks are constructed by the IPCC, two things stand out. First, the IPCC maintains the position that their research serves as objective and scientific knowledge that can inform policy, but does not prescribe policy choices. This overlooks the (often normative) choices that are made in the constructing process of risks. Risks are therefore, rather misleadingly, constructed as techno-managerial problems that can be solved with more scientific knowledge. This scientific knowledge eventually has the ability to overcome political controversy and will lead to rational climate change policy.

Secondly, through its focus on consensus and its status as a global institute, the IPCC contributes to the homogenisation of knowledge. While any construction of risk will relate to particular understandings of both nature or ecology, and how we wish to live, these understandings are often culturally informed. However, the IPCC has created a hegemonic construction of climate change risks, that influences future research on climate change *and* global policy, despite possible cultural variations in such understandings. The construction of risks presented by the IPCC therefore has detrimental influence on 'dissenting' voices who give alternative constructions of climate change risks. This has implications that reach beyond mere scientific interest, which will be the main focus of my next chapter.

While Beck acknowledges the construction of risk and the relation between power and knowledge behind those constructions, he does not account for the consequences of such power struggles, and especially the exclusion of specific (groups of) people in his theory. This can be found, however, in the theory of *epistemic injustice*. In the next chapter, I will focus on some of the ethical implications of the current construction of risks, and more specifically

how the global construction of risks as presented by the IPCC contributes to epistemic injustice for Māori epistemology.

Epistemic (In)justice and Indigenous Epistemology

So far I have explored how climate change risks are constructed by the IPCC on a more empirical level. Based on Beck and other academics who have analysed the IPCC, I have argued that current practices of climate change risk construction contribute to the marginalisation of Indigenous communities, who have their own way of engaging with nature, and adapting to or mitigating the effect of climate change. In this chapter, I will further explore the ethical dimension of the practices I have described in the previous chapter, by relating to the theory of epistemic injustice. As mentioned in the introduction, Indigenous epistemologies and ways of relating to nature are complex and diverse, and I will therefore limit myself to the way epistemic injustice relates to Māori epistemology. The research question I aim to answer in this chapter is therefore: which forms of epistemic injustice for Māori epistemology are relevant for the IPCC?

To answer the aforementioned research question, I will first outline the theory of epistemic injustice, after which I will apply this theory to the position of mātauranga Māori. I will argue that as a scientific institution, the IPCC plays an important role in the marginalised position of mātauranga Māori, and as such contributes to the epistemic injustice against Māori and their Indigenous epistemology. However, neither the IPCC, nor epistemic injustice operate in a historic vacuum. To truly understand the cause of the epistemic injustices, some understanding of the historic dynamic of power between different epistemologies is needed. Without an awareness of historic roots of (epistemic) injustice, solutions tend to be superficial and ineffective (see Kuokkanen, 2007: 67). I will therefore also analyse some of the historic roots of the epistemic injustice that are prevalent in (or even determinative for) the way in which the IPCC currently operates.

3.1 EPISTEMIC INJUSTICE

The term *epistemic injustice* was first coined by British philosopher Miranda Fricker. Her work on epistemic injustice mainly serves as a way to understand some of the injustices that marginalised groups or people are confronted with (Turri, Alfano & Greco, 2021). While there are many forms of injustices that marginalised people have to endure, she argues that some of these injustices are done to someone “specifically in their capacity as a knower”

(Fricker, 2007: 1). This lens therefore seems particularly fruitful for analysing the marginalisation that Māori and Mātauranga Māori face.

First, however, it is worth giving a more elaborate description of epistemic injustice. Epistemic injustices can occur in the most basic, everyday epistemic practices; making sense of our own social experiences, and expressing our knowledge to others (Fricker, 2007: 1). According to Fricker, epistemic injustice occurs when a person is falsely given less credibility, based on a prejudice related to the speaker's identity (Fricker, 2007: 1). This is the case, for example, when a person of colour is given less credibility simply based on prejudice related to their identity. Their testimonies are met with distrust, making it more difficult to be heard and believed. Additionally, epistemic injustice could occur when “a gap in collective interpretive resources puts someone at an unfair disadvantage when it comes to making sense of their social experiences” (Fricker, 2007: 1, see also 154ff.). For example, before the term *micro aggression* was widely in use, it was difficult for people to express their experiences to those who did not face such type of aggressive behaviour, but additionally, it was difficult to make sense of the systematic quality of this type of behaviour. Without this concept (as interpretative resource) it was therefore difficult for some people to make sense of their own social experiences, giving them a disadvantage. In both these cases, people are confronted with an unjust disadvantage related to their capacity as a knower; either in their capacity to make sense of their own social experiences, or in their capacity to successfully communicate what they know to others.

In her work, Fricker focusses on *systematic* and *persistent* forms of epistemic injustices, which are connected to a common (social or collective) prejudice (Fricker, 2007: 27 ff.; 158). While everyone might face moments in which their testimony is questioned, not all these epistemic errors or shortcomings are necessarily issues of justice. One could imagine, for example, that someone is unjustly disbelieved, because the hearer mistakes the speaker for another, less informed person. If this would remain an incidental occasion of lessened credibility, this would hardly be a case of injustice, as it doesn't harm the person in question. Such epistemic errors will inevitably occur every once in a while. Only when the credibility deficit takes a more systematic and persistent form, should we really speak of epistemic injustice, according to Fricker (2007: 27ff.). This is the case, when the credibility deficit is caused by prejudice related to someone's identity. Such prejudices have the tendency to “track the subject through different dimension of social activity – economic, educational, professional, sexual, legal, political, religious, and so on” (Fricker, 2007: 27). As prejudices are an unjust estimation of someone's ability, their influence on the way people are judged as

knowers lead to injustice (Fricker, 2007: 22ff.). Fricker therefore argues that epistemic injustice can be defined as “*identity-prejudicial credibility deficit*” (Fricker, 2007: 28).

Despite her focus on systematic and persistent forms of unjust epistemic errors, Fricker focuses specifically on individual, transactional forms of injustice, in which one person is treating another person unjustly, and on the virtues that individuals should develop to overcome such forms of injustice (Fricker, 2007: 67-71; 168-175; 177; Anderson, 2012: 165). This transactional focus has been taken up by other academics, who have further developed and nuanced Fricker’s concept of epistemic injustice (e.g. Carel & Kidd, 2014; Kidd & Carel, 2017; Stroupe, 2021; Bourgault, 2020). While these transactional forms of epistemic injustice are likely to occur, based on stereotypes held by Pākehā that Māori are less competent and less intelligent (Houkamau & Sibley, 2010: 23, see also Satherley & Sibley, 2018: 6), such a focus on transactional forms of (in)justice is less relevant for an analysis of science and the work done by the IPCC. I will therefore take a different perspective than Fricker, and focus on more structural and institutional manifestations of epistemic injustice. An understanding of epistemic injustice on institutional levels allows us to regard the cumulative effect of scientific risk constructions, even if from a local point of view, no injustice has been committed (Anderson, 2012: 164). That is, while one individual cannot be morally blamed for referring to an expert who uses a western perspective (intentionally ignoring these perspectives would, after all, also be a form of testimonial injustice), the cumulative effect of the global hegemonic position of a western perspective in science can still lead to injustice. While Fricker’s account of systematic and institutional forms of epistemic injustice is limited, such a (re)focus should be seen as complementary to her work, rather than criticising it (Fricker, 2007: 177; Anderson, 2012: 168).

3.2 THE MARGINALISATION OF INDIGENOUS KNOWLEDGE AS A FORM OF EPISTEMIC INJUSTICE

The question then is, to what extent this framework of epistemic injustice is relevant for Indigenous Knowledge in general, and mātauranga Māori in particular. As prejudice related to Māori identity is still existent in Aotearoa/New Zealand, it would be worth investigating to what extent this relates to Māori as knowers. Before doing so, however, it is worth elaborating on mātauranga Māori as an epistemology. Mātauranga Māori is closely related to other concepts, such as notions of the right way of doing things, the right methods, Māori aspirations and goals, and core beliefs about cosmology (Royal, 1998; 2012: 33ff; Henry & Pene, 2001: 234-236). As already mentioned in the introduction, Māori and other Indigenous

academics have warned against a reductionist representation of both Indigenous people, as well as Indigenous Knowledge. Given the limits of this thesis, I could not do justice to all these notions that make up Māori epistemology, without having to use some reductionist methods. I therefore refrain from attempting to give an exhaustive overview or definition of mātauranga Māori,⁶ but instead highlight a few notions that are relevant for the topic I am discussing here – risk constructions as presented by the IPCC.

In itself, the term *mātauranga Māori* does not explicitly refer to any particular methodology or set of goals, but should be seen as “a body or a continuum of knowledge with Polynesian origins, which survives to the present day albeit in fragmentary form” (Royal, 2012: 33). This body of knowledge has the ability to grow and evolve, and has done so under the influence of the arrival of Pākehā (Royal, 2012: 33; see also 1998: 6). However, there are some principles that are important to mātauranga Māori, that are different from the epistemology of Pākehā (Henry & Pene, 2001: 237). For example, Hikuroa (2017: 9) highlights that within mātauranga Māori, the interconnectivity between all things, the inclusion of facts *and* values, and the participatory role of experiencers play a central role. Following these notions, Tiatia-Seath, Tupou and Fookes (2020: 401-402) argue that, traditionally, Pacific peoples (including Māori) have an understanding of humans and land as *entangled*. There is therefore a relation of guardianship and protection between humans and land, which, according to aforementioned authors, “plays an important role in framings of climate change and environmental protection” (Tiatia-Seath, Tupou, & Fookes, 2020: 401-402).

Despite the understanding of mātauranga Māori as a continuum of knowledge that is able to grow and evolve, many academics have discussed the precarious position of mātauranga Māori. Much like in other settler-industrial states, after the arrival of Pākehā, the New Zealand government has prioritised western science over mātauranga Māori in their policy. Additionally, more active policy has been introduced to suppress mātauranga Māori, for example “by banning the language that carries mātauranga, by criminalising practitioners, and by removing access to opportunities to practise it” (Broughton & McBreen, 2015: 85). Te reo Māori is seen as the bridge between the physical/experiential domain and knowledge/ knowing, and thus the banning of Māori language will have detrimental impact on mātauranga Māori (Skerrett & Ritchie, 2020: 1102).

However, while te reo Māori has been mostly revitalised, mātauranga remains

⁶ Te Ahukaramū Charles Royal (1998) provides a more detailed description of the origin, meaning, guiding principles and application of mātauranga Māori.

marginalised (Broughton & McBreen, 2015: 87). To what extent can this marginalisation, then, be understood as epistemic injustice? In order to speak of epistemic injustice, the marginalisation of mātauranga Māori must be related to systematic and persistent credibility deficit, based on prejudice. Let us therefore take a closer look at the reasons for the marginalisation of mātauranga Māori. One of the objections against the use of mātauranga Māori that Māori often encounter, is that it is said to lack scientific basis (Smith et al., 2016: 132; Hikuroa, 2017: 6; Jackson & Mercier, 2020: 4; Waitoki, 2022: 139). The different ways of knowledge production that are important for mātauranga Māori are often not recognised by nonIndigenous people and institutions, and “likened more - as it often is - to religious rituals, dogma and ceremonies than to forms of knowledge production” (Smith et al., 2016: 132-133). Similarly, other forms of Indigenous Knowledge are dismissed as lacking scientific basis and as being merely cultural. Unlike the accounts of scientists or experts (by specific standards), “their claims are taken as expressions of their ‘worldview’ and ‘cultural identity’” (Townsend & Townsend, 2021: 149). While I think it would be correct to say that claims with regards to climate policy are expressions of worldview, and such an understanding is close to how Māori have described mātauranga Māori (see also Introduction), I have argued in the previous chapter that this is true for *all* scientific accounts of climate change risks; all accounts will ultimately reflect how we wish to live, and thus will reflect the worldview of those giving the account (see also Hikuroa, 2017: 9). While closer scrutiny of cultural differences in the constructions of risk is mostly absent in Beck’s work, based on the work of Māori and other Indigenous academics, it is evident that such cultural differences are relevant.

The dismissal of mātauranga Māori for being an expression of a particular worldview and a preference for science based on a Western worldview can be seen as an unjustified favouritism of one cultural perspective over the other. Looking at a more structural understanding of epistemic injustice, Anderson (2012) argues that epistemic injustice can occur when two (or more) social groups share particular worldviews amongst themselves, but not with each other, while one of those social groups is privileged over the other. For example, while mātauranga Māori and Western epistemology might coexist, people being familiar with the dominant, hegemonic epistemology will tend to privilege their own epistemology over the other. While single instances of such ‘preference’ aren’t unjust, structurally, they can lead to a disadvantaged position of those relying on the marginalised epistemology:

If the different groups engaged in inquiry are segregated along lines of salient social identities that are also the basis of systematic unjust group inequalities, then ethnocentrism will cause the advantaged groups to discount the testimony of disadvantaged groups. This will reinforce the epistemic disadvantages of the latter groups and damage the epistemic standing of their members. Ethnocentrism thereby causes a form of structural [epistemic] injustice (Anderson, 2012: 170).

As certain levels of group segregation has remained over the years (see Grbic et al., 2010: 26; 32), this seems to apply to the context of Aotearoa/New Zealand. Pākehā (and the wider scientific community) have discredited mātauranga Māori, reinforcing the epistemic disadvantage of Māori in Aotearoa/New Zealand. The prejudice that is at play here, is that a Western account will give a more accurate, less culturally biased perspective on climate change, while in reality any construction of climate change risk will relate to (culturally determined) values – or at least so I have argued in the previous chapter. To what extent this prejudice has systematic effect, will be discussed in the next paragraph, when taking a closer look at the epistemic injustice relevant for the IPCC.

3.3 EPISTEMIC INJUSTICE IN SCIENCE AND THE IPCC

Scientific practices play an important role in the production and circulation of knowledge; they could therefore be important “sites and sources of epistemic injustice” (Grasswick, 2017: 313). Apart from unethical conduct in science, such as the mistreatment of study subjects related to prejudice, racism and sexism, or the unjust attempt to justify sex differences or racial differences with ‘scientific proof’, there are more subtle forms of injustice related to science. Science has become tremendously influential, “shaping contemporary life and material conditions of existence through resultant technologies, science- based policies, and science- based decision- making” (Grasswick, 2017: 313). It therefore not only touches those directly involved in research activities, but reaches many aspects of our lives.

Like Fricker, Heidi Grasswick argues that epistemic injustices are often related to other forms of social injustice. Science, however, can have a reiterating effect on those injustices: “social injustices can push science in certain directions such that it creates new forms of understanding that can then serve as sources of further injustices” (Grasswick, 2017: 315). While science can amplify such (epistemic) injustice in a number of ways (see Grasswick, 2017), I will focus on the homogenisation of knowledge as discussed in the previous chapter. As we have seen, the importance of consensus in the scientific construction of risk given by the IPCC leads to the homogenisation of knowledge. While consensus is

often only reached amongst a few, the risk construction presented by the IPCC has global reach, influencing climate change policy on multiple levels and thus homogenising knowledge on climate change and the risk construction associated with it. Ford et al. (2016) argue that such a homogenised construction does not do justice to the sometimes diverging vulnerabilities and interests of Indigenous people. Based on testimonies of Māori academics, however, I propose that there is a specific harm done to Māori (and other Indigenous people) specifically in their capacity as a knower.

Some academics have argued that Indigenous knowledge, including mātauranga Māori, is only taken seriously, when it is similar enough to Western science (Broughton & McBreen, 2010: 84), or *used* in a Western framework, but not valued as a knowledge system in its own rights (Kuokkanen, 2007: 67; Hikuroa: 9). As Broughton and McBreen (2015: 84) have phrased it so eloquently: “Mātauranga is currently treated as knowledge to be exploited, but not supported.” They point out that through the ongoing privileging of Western epistemology and the suppression of other epistemologies, Western epistemology has come to appear as the only possible framework. They argue, however, that “Western epistemology is the key to *Western* culture, to living and developing as a *Western* nation. Likewise, mātauranga is the key to *Māori* living and developing as *Māori*” (Broughton & McBreen, 2015: 84, emphasis added). However, to date mātauranga Māori is often disregarded by the wider scientific community (Hikuroa, 2017: 6).

If the scientific community that academics such as Hikuroa (2017) speak of is understood as *community of enquirers* (a term I borrow from Giladi, 2018: 146), then that means that currently some contributions are unjustly dismissed based on prejudice, such as the ethnocentric favouritism towards one particular epistemology as discussed above. This should be understood as a specific form of epistemic injustice that is specifically related to science: “if someone fails to be taken seriously in their contribution to joint epistemic inquiry due to the forces of oppression (such as through the mechanisms of prejudices and stereotypes), an epistemic injustice occurs” (Grasswick, 2017: 316).

This specific form of epistemic injustice thus applies to science in general, but can also be observed in the way the IPCC works. Indigenous knowledge, including mātauranga Māori, is currently underrepresented in the IPCC reports. Ford et al. (2016) point out that Indigenous knowledge is mainly mentioned in working group II (‘Impacts, Adaptation and Vulnerability’), but is often only referred to in general terms, “making broad statements without providing detail or specific examples [...]. Indigenous peoples, for example, are commonly referenced in lists alongside marginalized or vulnerable social groups, without a

nuanced discussion of different lived experiences or cultural and colonial histories” (Ford et al., 2016: 350). Reference to the *content* of Indigenous knowledge is very limited; 68% of the times indigenous knowledge is included, this content is expressed in only one sentence, 9% of the times, indigenous knowledge is expressed in more than 5 sentences (see Ford et al., 2016: 350 for more statistics on the include of Indigenous knowledge).

In the past, the rules of procedure have been adjusted, so that non-peer-reviewed literature could be included in the IPCC, “partly to accommodate more diverse regional sources of knowledge for the regionally focused chapters of Working Group 2” (Hulme & Mahony, 2010: 709). This has been scrutinised since, because “using information from non-published sources may compromise the scientific authority the IPCC has gained over the years it has been in operation” (Skodvin in Hulme & Mahony, 2010: 709). An attempt to include more indigenous perspectives has thus been overruled, due to systemic structures of what is considered scientific.

The effect of this underrepresentation of Indigenous knowledge in general, and mātauranga Māori in particular, is that Indigenous people are given less credibility and are therefore excluded from the scientific community. However, while this effect can be tied to the work done by the IPCC, one could oppose that the reason for this phenomenon cannot be pinned to the IPCC as an institute. The argument given above relates to a lack of peer-reviewed literature. Being an institute that synthesises existing science on climate change, rather than conducting research of their own, one could argue that the IPCC is not the main actor to overcome the injustice. As long as this ‘gap’ in knowledge or literature exist, the IPCC will reflect this gap. Seen as such, it is the responsibility of Indigenous communities and scholars to conduct more research that can be used by the IPCC (see Agrawala, 1998b: 632). However, as Sullivan and Tuana argue: “a lack of knowledge or an unlearning of something previously known often is actively produced for the purposes of domination and exploitation” (Sullivan & Tuana in Grasswick, 2017: 314). I will argue in the next paragraph, that assuming that Indigenous scholars ought to take responsibility for their own empowerment and inclusion in IPCC reports overlooks the roots of some of the injustices that we are witnessing today, and the way in which these historic roots of injustice are still prevalent in the way the IPCC operates.

3.4 ACTIVE IGNORANCE

When speaking about the inclusion or representation of indigenous epistemologies in current epistemic institutions, one cannot help but speak about colonial relations between different

peoples. While the colonial past has caused a variety of injustices, Puerto Rican sociologist Ramón Grosfoguel argues that some of these injustices relate directly to peoples epistemic abilities and resources. In an article about the structure of knowledge in westernised academia (2013), he argues that systematic erasure of other epistemologies in the past, still influence the way we perceive science and knowledge today. He relates four historical genocides that have had this influence; the genocide against Muslims and Jews in the 16th century, against African people through captive trade and their enslavement, against women who practiced Indo-European knowledge and were burnt as witches, and finally against Indigenous peoples. These genocides are, according to Grosfoguel, “constitutive of the modern/colonial world’s epistemic structures” (2013: 77). While these genocides are often thought of as physical genocides, Grosfoguel argues that they should *also* be understood as *cultural genocides*. While the four genocides mentioned above occurred in different regions in the world and in different time periods, they have in common that people were forced to assimilate and to give up (the practice of) their already existing body of knowledge. This was combined with the burning of libraries and written practices. One could add the historically less distant ban on Indigenous languages as carriers of knowledge (Broughton & McBreen, 2015: 85; Whyte, 2018a: 135) and the residential schools in northern America or missionary schools in Aotearoa/New Zealand, aimed to teach children “to be ashamed of their languages, cultural beliefs and traditions” (Bombay et al., 2014: 322) and to interrupt the transmission of language, worldview and Indigenous knowledge (Rameka & Stagg Peterson, 2021: 309). Apart from the atrocities of the physical genocides, cultural genocides in the (not always distant) past have thus deliberately destroyed other forms of knowledge and ways of knowing (see also Bhargava, 2013: 414). Grosfoguel refers to this process as *epistemicide* (2013: 79f.).

Much like Beck (see §2.3), Grosfoguel argues that theory emerges from an effort to conceptualise our social and historical experiences and is ultimately tied to the worldview of particular places (2013: 74). However, due to epistemicides, it has become possible to think that “the knowledge produced by a few men from five countries in Western Europe⁷” have led to the only systematic epistemologies that are capable of explaining any social phenomenon in the world (2013: 74). It is not by coincidence or by merit⁸ that theories with Western origin

⁷ The countries that Grosfoguel considers to fall under this epistemic privilege, are Italy, France, England, Germany and the USA. Although he does not clarify why the USA would fall under Western Europe, I am assuming he refers to the ‘settler’ USA of European descent, thus excluding the Indigenous knowledge which he considers the victim of epistemicide, despite being from the same geographical region.

⁸ That is not to say the theories with Western origin have not proved their merit, but rather that their position as the only systematic epistemology would not have been possible without historic epistemicide.

appear as the only systematic, thought-through and therefore respectable body of knowledge, but through active oppression and even the complete erasure of competing epistemologies in the past. Now, the use of knowledge from Western Europe has become so self-evident that the exclusive use of Westernised Knowledge has been normalised and accompanied with claims of universality (Grosfoguel, 2013: 87). Furthermore, American academic Charles W. Mills argues that the normalisation of Western perspectives and the structural underestimation of Indigenous knowledge has become so manifest, that “competing [non-white] conceptual frameworks and their related categories now appear odd, perhaps even bizarre, to us. It is hard for us even to grasp them because of the deep cognitive naturalization of Eurocentrism and whiteness in our outlook” (Mills, 2015: 222). Thus, while alternative epistemic frameworks exist, these “are blindly rejected as worthless” (Bhargava, 2013: 414).

Both Grosfoguel and Mill thus describe a situation in which past power dynamics, oppression and even cultural genocides have caused some epistemologies to be considered superior over others. While epistemologies with Western origin seem universal or natural, other epistemologies appear odd, culturally biased or only of local or regional relevance (see also Kirloskar-Steinbach, 2019: 1494). While the injustice of past epistemicides as described by Grosfoguel cannot be undone, Mills argues that one of the main causes for epistemic injustice today, is the inability to acknowledge the hierarchy in epistemologies or ways of knowing that has been created. While some people benefit from this hierarchy, namely those familiarised with and relying on Western epistemology, they fail to acknowledge the privilege derived from the past. It is this “refusal to recognize how the legacy of the past, as well as ongoing practices in the present, continues to handicap people of color...” (Mills, 2015: 219) that perpetuates the injustices of past epistemicides. It allows those relying exclusively on Western frameworks to live with “the inapt assumption that one can know everything there is to know about the social world” (Medina, 2017: 250). Like Mills, Medina argues that this form of ignorance is characterised by an active resistance to acknowledge the lacuna’s in one’s knowledge. This inapt assumption that one epistemology can explain all there is to know about the social world, combined with an active refusal to recognise that past oppression has played an important role in the current hierarchy of epistemologies is thus an *active* form of ignorance, one that continues to shape current epistemic activities. This active form of ignorance has a self-affirming effect.⁹ As long as other epistemologies remain

⁹ This self-affirming effect of ignorance has been brought to my attention by Van Norden (2017: 28), who argues that the lack of (past) influence of non-Western philosophy of Western academia is often used as an argument to

marginalised, their conceptual frameworks and related categories will remain to be perceived as odd or culturally determined, while the Western frame, that has forcibly been made known globally will remain to appear universal. It is thus harder for people working with Indigenous epistemologies to make themselves understood by those (only) familiar with Western epistemology, whereas people working with Western epistemologies are often understood globally – whether their perspective is the most accurate or not (see also Anderson, 2012: 170; Bhargava, 2013: 416). This falsely reaffirms the notion that Western epistemology is the only epistemology with universal value.

The injustice that is still relevant today, is thus not so much the epistemicides that have erased or marginalised other epistemologies in the past, but a failure to acknowledge how such past events still shape our ability to perceive alternative epistemologies today; not as odd or even bizarre, but as a knowledge system/epistemology in its own right.

This form of epistemic injustice relates to the IPCC in two ways. First, the IPCC seems to work based on the inapt assumption that Western epistemology is enough to explain the (often also social) phenomena related to climate change, such as viable adaptation strategies. While risk constructions are tightly related to worldviews and local perspectives, as I have argued in the second chapter, the IPCC seems to presume that the Western perspective¹⁰ will suffice to inform global strategies for mitigation and adaptation, while other, Indigenous perspectives remain marginalised (see §3.3). But secondly, the IPCC reiterates the assumption that Western epistemology is enough to explain all phenomena by causing further homogenisation of knowledge about climate change and risks associated with it. With their influence on global policy, they contribute to the further circulation of Western construction, this time specifically related to climate change risks and viable strategies of mitigation and adaptation (see §2.5). While I have focused on the marginalisation of *mātauranga Māori*, it is evident from Grosfoguel's work that similar power dynamics are relevant for other epistemologies with Indigenous origin. The problem is thus not only that any single epistemology is given too little credibility in the construction of risk, but rather that the Western frame is given too much credibility. The IPCC deepens the 'cognitive

not include these philosophies in Western academia; "because they have little impact on our philosophy, we are justified in remaining ignorant about their work" (Schwitzgebel in Van Norden, 2017: 28).

¹⁰ I want to note that the IPCC does include contributions from around the globe. In this sense, one could argue that not only Western perspectives are included, but also African, Asian, Latin-American perspectives are included. Grosfoguel, however, argues that due to the historic epistemicides, all epistemologies are influenced by Western perspectives, so that one can only speak of relative otherness: "After 500 years of coloniality of knowledge there is no cultural nor epistemic tradition in an absolute sense outside to Eurocentered modernity." (Grosfoguel, 2013: 87). It is therefore perhaps more appropriate to speak of *westernised* science. For a more nuanced perspective on this type of Westernisation, see Appadurai, (1996: 32ff.).

naturalisation’ of a Western perspective “by implicitly encouraging/echoing/backing up [its] authority in an arbitrary way while at the same time (at least indirectly) undermining and creating obstacles for dissenting voices” (Medina, 2011: 18). While the IPCC is not at fault for the past injustices caused by epistemicides, it can play an important role in the epistemic (in)justice of current and future epistemic practices.

3.5 CONCLUSION

Based on the contribution of Māori and other Indigenous academics, one can conclude that the way the IPCC constructs climate change risks relies on a Western understanding of science and knowledge. While the use of a Western understanding of science and knowledge is not an injustice as such, the systematic privileging of this particular perspective or epistemology does contribute to an unjust marginalisation of other epistemologies, in particular Indigenous epistemologies such as mātauranga Māori. It ‘naturalises’ a particular epistemology, to the effect that other epistemologies appear odd or unsensible, unable to meaningfully contribute to epistemic practices related to climate change knowledge. People who construct climate change risks based on mātauranga Māori, are therefore harmed in their capacity as a knower, as their contributions to climate change knowledge is are unjustly discredited. This should be understood as a particular form of epistemic injustice.

This is especially relevant for global constructions of climate change risks, as presented in the reports of the IPCC. The global homogenisation of climate change knowledge and particular ways of constructing climate change risks, to which the IPCC actively contributes, further strengthens the hegemonic position of one particular epistemology, while marginalising other epistemologies and ways of constructing climate change risks. The unwillingness to acknowledge this hegemonic position of one particular epistemology in their constructions of risks, should be seen as an active form of ignorance on behalf of the IPCC.

However, all is not lost. In the next chapter, I will argue that the IPCC could also contribute to *overcoming* the epistemic injustice I have described above, by analysing a variety of strategies.

Overcoming Epistemic Injustice in the IPCC

So far I have focused on an analysis of the way the IPCC constructs climate change risks, and how this could be problematised using the ethical theory of epistemic injustice. I now turn to a more constructive approach, by focusing on the question how the IPCC can overcome epistemic injustice for Māori epistemology. It is this last question that will be central in this chapter. I will discuss three possible strategies to overcome epistemic injustice; the inclusion of more Māori people, the inclusion of more research based on mātauranga Māori, and finally making the Western epistemological presumptions explicit. I will argue that this last strategy is the most viable for the IPCC.

Some have argued that the IPCC is not “the right forum” to challenge the marginalised position of some people, social groups, or nations in the construction of risks, and instead those who are marginalised ought to challenge this position (see Agrawala, 1998b: 632). However, “[i]t is questionable whether an individual or group could ever really be regarded as an effective challenger to the dominant interpretations in society if they were not understood as credible knowers” (McConkey in Giladi, 2018: 147). Thus, while I do not wish to question the self-empowering abilities of Indigenous academics, I will focus on the contributions the IPCC could make, as an important site *and* source for epistemic injustice, in overcoming the injustice described in the previous chapter.

4.1 EPISTEMIC FRICTION BY SEEKING OUT OTHERS

The position that the IPCC has, can be understood as feeding into the hegemonic position of one construction of risk, thereby marginalising other possible constructions of risks associated with climate change. I have argued in the previous chapter that this should be understood as a form of epistemic injustice for Māori (amongst other Indigenous peoples), but that the problem can be understood as a form of credibility excess that is given to the Western frame that the IPCC relies on. As the IPCC is an important site and source for this type of injustice, they can play an important role in contributing to justice.

Medina’s understanding of the consequences of systematic excess of credibility dovetails with Mills understanding of white ignorance and the racial privilege of non-knowing and can thus be applied to the role of the IPCC. Medina, however, adds a more active

understanding of this privilege, as something that can be overcome. His position therefore seems a fruitful starting point for thinking about solutions for the IPCC's contribution to epistemic injustice. Medina argues that active ignorance, as described in §3.4, can be overcome by seeking out *epistemic friction*, which he understands as a type of epistemic practices that “exert pressure and create trouble so as to halt and disrupt oppressive dynamics” (Medina, 2017: 254, see also 2011: 29). More specifically, epistemic friction can be created “by searching for alternative viewpoints, by considering epistemic counterpoints, by establishing comparisons and contrasts among perspectives, by looking at things from various angles and formulating points in alternative vocabularies” (Medina, 2011: 30). According to Medina, this type of friction will meliorate people's capacity to see and hear, and can thus benefit epistemic interactions. While Medina, like Fricker, focuses on individual values and behaviour to create epistemic friction (see Medina, 2011: 30; compare §2.1), his notion of epistemic friction could be applied on a more institutional level. I will thus use this concept to explore how the IPCC can actively contribute to epistemic justice and thus help overcome the current epistemic injustice I have described in the previous chapter.

In relation to science, Grasswick, who I have mentioned in the previous chapter, spells out some options that are similar to Medina's suggestions. She argues that the scientific community can overcome epistemic injustice, by undertaking “cooperative epistemic activities such as querying the assumptions, methods, and results at stake, being taken seriously in brainstorming sessions, or being sought out by others to critique a novel theory or idea in its early form” (Grasswick, 2017: 316). While this is especially relevant for direct scientific practices (such as study designs), such cooperative epistemic activities could also apply to other aspects of science. When it comes to addressing epistemic needs and agenda setting, for example, Grasswick points out that the scientific community can take a proactive stance in involving both academics from marginalised backgrounds and laypeople who might have different priorities (Grasswick, 2017: 317-318).

While the terms *epistemic friction* and *cooperative epistemic* activities might initially seem contradictory, one could imagine that the cooperative activities mentioned by Grasswick could lead to epistemic friction, when they enable discussion on which epistemic needs to prioritise. As we have seen in chapter 2, the IPCC has to make choices concerning the structure of their reports, how much space to allocate to each topic, or the structure for framing knowledge (Ford et al., 2016: 349). Actively including and hearing academics and laypeople from different backgrounds in these discussions, could lead to epistemic friction, and challenge the assumptions the editor writing teams might (unconsciously) hold.

Furthermore, actively seeking others (especially those with marginalised backgrounds, who would otherwise be overlooked), could show some epistemic humility. It would acknowledge that in the process of construction, others might have different viewpoints, and that those who currently have easier ways to participate in the construction of risk do not know everything there is to know about the social world.

The IPCC could institutionalise such cooperative epistemic activities, by adopting a more proactive approach in searching for alternative viewpoints and epistemic counterpoints by including more academics of Indigenous background in their (editorial) writing teams. Furthermore, people from marginalised backgrounds could be invited to challenge decisions on overall structure and space allocated to different topics, or the framework of knowledge that has been chosen. While it might be impossible to reach consensus between all social groups globally, the IPCC could acknowledge the different perspectives, showing more transparently what choices they have made, and how these choices can be or have been challenged.

This proactive approach could also be reflected in an adjusted principle of diversity. As mentioned in chapter 2, the current principle of diversity influences the coordinating lead authors, so that in teams of two, one person is from a developing country and one person is from a developed country. It is unclear how such a diversity principle is translated to overall contributions of authors.¹¹ At the moment, contributions are accepted in three different ways; contributing authors can be enlisted by (coordinating) lead authors, they can be nominated by governments and observer organisations, or thirdly, can send unsolicited contributions (IPCC, 2022a). One could imagine that a similar principle of diversity applies to the overall contributions that currently applies to the coordinating lead authors, so that a certain percentage of contributions come from people with a Māori background (or generally with an Indigenous background, see Ford et al., 2016: 351). For this, however, the diversity principle must also be changed, so that more axes of diversity are acknowledged. While the IPCC currently focuses on geographical representation, this focus is not sensitive enough to the power dynamics within countries. While Indigenous people living in settler states might geographically represent developed countries, it is important that the IPCC becomes more sensitive to the fact that within settler states, certain social groups would benefit from more representation, importantly the Indigenous peoples living in those countries, such as Māori.

There are, however, important pitfalls in this approach. In relation to diversity and

¹¹ Include the numbers of countries that the IPCC lists. That would be fair here, to show that the IPCC does intend to be transparent.

inclusion in academia, Kirloskar-Steinbach argues that there are some ethical issues with the inclusion of marginalised others, when the regulations of inclusion are determined by those part of the hegemonic position. She argues that these marginalised others are then not “consulted as epistemic agents in their own rights [...]. Rather, they become objects of information (sometimes knowledge), to be consulted when the occasion demands it” (Kirloskar-Steinbach, 2010: 1494). Kirloskar-Steinbach argues that such a dynamic will only lead to the inclusion of those people that speak or act similar enough to those who have privileged or hegemonic position, rather than the inclusion of people representing other worldviews or epistemologies. Inclusion and diversity, then, are turned into a sort of ‘body count’. While non-Indigenous people (bodies) are replaced by Indigenous people (bodies), thus overtly suggesting diversity, this does not lead to a diversification of *ideas*, *worldviews* or *epistemologies* (see Ahmed, 2012: 36). While Kirloskar-Steinbach (and Ahmed, 2012) mainly relate to academia, in which different dynamics of power, inclusion and diversity might be at play, similar objections could apply to any scientific community, and gives reason to be hesitant to adopt such an approach within the IPCC. Specifically in relation to Māori, the approach described above would imply that Māori are only sought out to contribute to risk constructions, when their contributions are similar enough to the Western framework that is being used. The inclusion of people with Māori identity does not guarantee the inclusion or representation of mātauranga Māori. Thus, *only* focusing on diversity principles related to people’s identities, without also critically addressing whether they can rely on their own epistemologies in their constructions of climate change risks would not necessarily constitute epistemic *friction*, where one seeks out alternative viewpoints and counterpoints. Mātauranga Māori would still not be relied on to contribute to risk constructions.

To truly do justice to mātauranga Māori, it is therefore not enough to include Māori by means of a diversity principle, when this entails the expectation of not diverting from the existing dominant construction. While including Māori can be beneficial or just in its own terms, it would not do justice to *mātauranga Māori*.

4.2 EPISTEMIC FRICTION VIA CONTENT REPRESENTATION

Another option, is to be more mindful about the inclusion of research based on mātauranga Māori. For example, mātauranga Māori has become more and more influential when it comes to ecological preservation, and has thus become a valuable source of knowledge in research in Aotearoa/New Zealand (e.g. Moller, 2009; Bryant et al., 2017; McAllister et al., 2019; Jackson & Mercier, 2020). To represent this knowledge in global constructions of risk, and to

make sure that the inclusion of Māori in writing teams does not rely on the dynamic described in the previous chapter, one could install a diversity principle, in which a certain amount of research based on mātauranga Māori is included in the reports, similar to current principles of geographical representation. This seems especially feasible for the IPCC, as they do not conduct their own research, and thus rely on the synthesis of existing research (IPCC, 2022d). The inclusion of a certain percentage of research based on mātauranga Māori would be a rather easy principle to implement.

In order to genuinely create epistemic friction, however, one has to be cautious that such an implementation of mātauranga Māori based research does justice to mātauranga Māori as an epistemology *in its own right*. To create friction or serve as a counter-perspective, it needs to be distinguishable from the dominant perspective that is taken. As mentioned in §3.3, Māori and other Indigenous academics have argued that their epistemic contributions are often only taken seriously when they are similar enough to Western framework. Indigenous knowledge is then often seen as ‘complementary’ knowledge, but not as a complex and dynamic epistemology with distinct dimensions (Cameron et al., 2021: 2).

To some extent, the inclusion of other epistemologies as counter-perspectives could also be institutionalised, so that they are presented as epistemologies in their own right. For example, one could imagine that reports are structured so that different chapters reflect different perspectives. Separate constructions of risks, priorities, and viable policy options with regards to adaptation to and mitigation of climate change could then be included in the reports. However, due to the structure of synthesis reports and the summary for policy makers, this will also necessarily entail the use of mātauranga Māori by non-Māori academics, and the reshaping, appropriating and merging of concepts that are crucial for mātauranga Māori. This is problematic according to some Indigenous and Māori academics. Broughton and McBreen, for example, have warned that mātauranga Māori cannot simply be taken up by non-Māori and implemented in research based on Western framework:

[a]lthough there will be opportunities to work together, that is not the goal of revitalising mātauranga. The goal is not partnership; it is tino rangatiratanga and reinstating mātauranga as a primary and independent knowledge system. Future relationships will be between equals (Broughton & McBreen, 2010: 86).

They argue that “[m]ātauranga belongs to Māori” and rebuilding mātauranga should therefore be done by Māori, not by (foreign) government agencies (2010: 85). Similarly, although not specifically with mātauranga in mind, Kirloskar-Steinbach argues against the representation

of epistemically marginalised people or groups by those who are part of the privileged group, because “[i]t can lead to an essentialized construction of the ‘Other’, objectify the represented, and construe their traditions along lines developed under the sway of Orientalism, etc.” (Kirloskar-Steinbach, 2019: 1493). Similar objections have been made by Weaver in relation to Indigenous people in the U.S. She notes that “[n]onindigenous people do not want to see aspects of Native people that do not support their own ideas and beliefs, thus leading to a perpetuation of stereotypes” (2001: 247). When appropriation, reshaping and summarising different epistemologies with which one is not familiar, one thus risks misrepresenting those epistemologies, leading to a reiteration and perpetuation of stereotypes.

Following these critical notions, epistemic friction can only be created when *mātauranga Māori as developed by Māori*, is valued in its own right and given the same epistemic credibility as Western epistemology, all other things being equal. The IPCC could therefore only contribute to epistemic justice when Māori are supported to develop *mātauranga Māori* in its own right, without attempting to include an essentialised version into Westernised constructions of risk. To what extent the inclusion of *mātauranga Māori* is acceptable, or where one should draw the boundary between an essentialised construction of the other and an authentic representation of the other can best be judged by Māori, not me. While I have refrained from using *mātauranga Māori* out of its context, and have tried to stay close to words used by Māori when describing *mātauranga* (and their experiences of injustice, inclusion or misrepresentation), I may have still been guilty of misrepresenting their worldview. To prevent (further) harm, I will not come to any decisive conclusions about the correct representation of *mātauranga Māori* in climate change risk constructions, and instead focus on the position of the epistemology with which I am familiar. Kirloskar-Steinbach (2019: 1493) argues that, in order to prevent an essentialised construction of the other, it is crucial to have a critical consciousness of one’s own beliefs. In the following paragraphs, I will further explore how the IPCC could institutionalise such a critical consciousness.

4.3 EPISTEMIC FRICTION BY POSITIONING ONESELF; MAKING THE INVISIBLE VISIBLE

In order to achieve epistemic friction, understood as actively seeking alternative viewpoints and counter-positions, one first has to acknowledge that there is something outside of one’s own perspective that could be different, or in other words, that one’s own perspective is limited. As such, Medina (2017: 252) argues that some of the labour related to epistemic friction occurs ‘internally’, by confronting oneself with “one’s epistemic gaps and complicity with patterns of ignorance and insensitivity.” As we have seen in §3.4, the ignorance that is

relevant for the IPCC, relates to the privileging of Western epistemology over other epistemologies. The IPCC could thus contribute to the conditions for epistemic friction, by making the role of Western epistemological presumptions more explicit.

It is worth noting that a Westernised epistemology as unseen and unchallengeable background is often only unseen and implicit for those who have internalised this epistemology and its epistemic and scientific practices. Privilege and the power that comes from being affiliated with the dominant or hegemonic category (in this case Western epistemology), is often *self-hiding* in the sense that those in the privileged category often fail to see their category as a category at all (Medina, 2017: 253; Wildman & Davis, 2013: 795; 797; Ahmed, 2012: 35). Rather, those within the privileged category tend to focus on individual traits and differences, making privilege about individual merit. However, this invisibility of the privileged category, which allows the perspectives of those within the category to appear as setting the norm, from which all other perspectives can only deviate and appear odd, is mostly only invisible to those *within* the category. Specifically in relation to race, for example, Medina points out that “whiteness has been invisible only for the white gaze *but not for racially oppressed subjects*, who—as [Charles W.] Mills emphasizes—have formed a powerful counter-public, with their alternative experiences and interpretations, and their counter-memory.” (Medina, 2017: 253, emphasis added; see also Pinn, 2017: 71; Wildman & Davis, 2013: 795; 797). And while these academics relate to race as a social category that imparts some individuals with more privilege than others, similar dynamics apply to research and epistemology. For example, Kirloskar-Steinbach notes the tendency to refer to certain epistemologies or philosophies as cultural (e.g. ‘African thought’ or ‘Indigenous knowledge system’) whereas Euroamerican thought “is allowed to present itself without any such qualifier” (Kirloskar-Steinbach, 2019: 1494). These epistemologies are simply thought of as neutral and universal (see §3.4). She argues that, in order to overcome epistemic injustice, this Western thought needs to be acknowledged as *situated*. This would enable us to see that certain epistemological assumptions are related to specific contexts, and are not the “sole way of interacting with the world” (2019: 1500).

While Kirloskar-Steinbach speaks of academia and cross-cultural philosophy, her contribution would align with Broughton and McBreen’s position, when they argue that “Western epistemology is the key to *Western* culture, to living and developing as a *Western* nation. Likewise, *mātauranga* is the key to *Māori* living and developing as *Māori*” (Broughton & McBreen, 2015: 84, emphasis added). While it is not wrong to use Western epistemology to explain Western institutions or prescribe policy in a Western context, it might be of limited

use in other social and cultural contexts (see also Gegeo & Watson-Gegeo, 2001: 55-57). Making the epistemological assumptions underlying research or reports clearer, allows readers to see the situatedness and thus possible limits of certain constructions of risks and viable ways of dealing with those risks. This will allow dissenting voices to challenge the hegemonic position of the Western framework (see also Pinn, 2017: 79ff.).

Based on Beck's analysis of risk constructions (see §2.3), some of the epistemological assumptions that could be explicated, relate to the way we understand nature (as something instrumental to human wellbeing or as something valuable in its own right, of which humans are only a part), which lifestyle options are acceptable (how much of our welfare are we willing to sacrifice to preserve nature) and ultimately how we wish to live (which visions of a good life determine the utopia we strive for). This would require a rather philosophical debate, turning the IPCC reports into normative essays, rather than risk reports. One could argue that, while perhaps valuable, this is not in line with the IPCC's mission or task.

There are, however, other epistemological assumptions that influence the IPCC reports. In a reflection on Western-based research conducted in collaboration with Māori and Mātauranga Māori,¹² Stephen Crawford (2009) shows that explicating Western epistemology used in research does not have to [end up] in philosophical or ethical discussions. In the original research, it is stated that “the choice of goals, methods and communication modes of science can readily be changed to reflect tikanga and facilitate participation by Māori, but fundamentals of objectivity, measurement, test and logic are not negotiable if science is to remain science” (Moller et al. in Crawford, 2009: 164). Crawford objects, however, that Western science has a long history of cultural adaptation and development. Thus, “the statement that the *process* of science is ‘not negotiable’ is both misinformed and tending toward bigotry” (2009: 164, see also De Pryck & Wanneau, 2017: 204). He argues that (intercultural) research should explicate their references to “Western scientific method *as a formalised, culturally-specific method of learning*” (Crawford, 2009: 164, emphasis added). He emphasises the role that hypotheses, falsifiability, predictions and probability play in Western(ised) science (2009: 163-164). Such epistemological presumptions are specific to Western epistemology and our understanding of scientific knowledge, often with historic roots, but are not necessarily universal for all knowledge systems (see also Aikenhead &

¹² In 2009, a special edition of the *New Zealand Journal of Zoology* (volume 36, issue 3) was published, in which an extensive research on sustainable harvesting of a specific seabird native to Aotearoa/New Zealand was presented, and criticised by several academics. While mainly focussing on this harvest, the research team formulated the secondary research aim to “compare science and mātauranga Māori (Māori knowledge)” (Moller, 2009: 203).

Ogawa, 2007; Stephens, 2000: 11; Assembly of First Nations, 2009: 4). Crawford argues that such principles should be understood as protocols that Western(ised) science, as an extended community, has agreed upon. However, Western(ised) science does not hold a monopoly on logic-based and reliable knowledge. Indigenous communities, too, “use protocols to define the ways of approaching, understanding, and being in the world, and to facilitate knowledge transmission” (Crawford, 2009: 165).

One example of an epistemic presumption that is relevant for mātauranga Māori and the IPCC, is the strict distinction between scientific knowledge and non-scientific knowledge.¹³ While the compatibility or incompatibility of mātauranga Māori and science has been problematised (Hikuroa, 2017: 8ff.), Broughton and McBreen (2015: 83-84) argue that a division between scientific and non-scientific knowledge is inappropriate altogether to understand mātauranga Māori. They state that “[m]ātauranga is its own system with its own organisation” (Broughton & McBreen, 2015: 84).

This distinction between scientific and non-scientific knowledge, however, plays a crucial role in the work of the IPCC. For example, a change in rules of procedure so that more research based on Indigenous knowledge could be included (see §2.3), has been denied for compromising the scientific authority of the IPCC. At the same time, the boundary between scientific and non-scientific knowledge is not self-evident: “‘science’ is no single thing: its boundaries are drawn and redrawn in flexible, historically changing and sometimes ambiguous ways” (Gieryn in De Pryck & Wanneau, 2017: 204). As a consequence of this flexible and sometimes ambiguous character of science, scientists, as a wider community, spend significant time “defending the specificities of their domains and opposing them to ‘non-scientific’ activities” (De Pryck & Wanneau, 2017: 204). The choices that are made in this type of ‘boundary-work’ will depend on (culturally) informed epistemic presumptions. Rather than concealing such choices, the IPCC should include them into their reports, so that the influence of any particular epistemology becomes visible and therefore challengeable for those with other epistemological backgrounds.

Crawford writes that such attention for Western science standards might feel out of place when applied to articles published in peer-reviewed journals, because they are written “*by* professionals, *for* professionals” (Crawford, 2009: 164). Similar objections might be made for the IPCC. However, the reports published by the IPCC are written for a wide range of *policy makers*, and not just scientists. Furthermore, as they are written for policy makers all

¹³ There are likely many more differences between Western epistemology and any other epistemology, including mātauranga Māori, but I leave it to those more familiar with other epistemologies to point out more differences.

over the globe, they ought to reflect intercultural sensitivity, making their methods knowledgeable for everyone, if not usable for everyone.

4.4 SCIENCE, HUMANITIES, AND POLICY ADVICE

Rather than focussing on what Indigenous communities and academics must do to be heard or included, I have thus focused on conditions that the IPCC must provide, in order for others to be able to challenge the hegemonic position that the risk constructions of the IPCC currently hold. Being more explicit about the culturally determined epistemic presumptions contributes to the unveiling of the “carefully orchestrated self-hiding of the white gaze” (Medina, 2017: 253), and thus allows epistemically marginalised groups to challenge those presumptions.

Being more explicit about the normative aspects of the risk constructions in IPCC reports would require more detailed description, and thus more text to be allocated to this topic. This, in turn, would suggest that the IPCC ought to include more contributions coming from the humanities or social sciences, that specifically relate to the way certain constructions of climate change risks relate to certain epistemic presumptions and the ethical implications that are tied to this. Academics from fields such as the philosophy of science or cultural and social comparative studies are (better) trained to explicate cultural and normative influence on science (Van Bouwel, 2019: 26-27; Jasanoff, 2021: 7). However, these fields remain underrepresented in the IPCC. The IPCC states that the Bureau of the IPCC Working Groups select experts so that “the teams include a mixture of experts”, which is supposed to ensure that reports are not biased towards any particular perspective (IPCC, 2022a). It has been pointed out by critics, however, that the IPCC fails to overcome a disciplinary bias. When the sources were analysed for the third assessment report, only 12% of the peer-reviewed sources were from the social sciences (Hulme & Mahony, 2010: 707). Within social sciences, economy seems to dominate, a discipline “associated more with efficiency than with concern for the social determinant of inequality and injustice” (Jasanoff, 2021: 3). In the analysis of disciplines mentioned above, the percentage of social sciences drops to 8% when economics are left out of consideration (Hulme & Mahony, 2010: 707). Currently, those disciplines that could contribute to an explicit analysis of the role of values and epistemic presumptions in risks constructions are thus starkly underrepresented. While an overrepresentation of natural sciences could be justified in the work the IPCC does on the physical scientific basis for observed and projected climate change, it is not self-evident in those chapters that relate more directly to adaptation and mitigation strategies. As the IPCC has shifted more and more

towards a solution-orientated approach (see §2.4), a shift in disciplinary representation would be appropriate.

4.5 CONCLUSION

To conclude, the IPCC can contribute to epistemic justice by challenging the active ignorance that is currently at play in the construction of risks. Following Medina, I have argued that this can be achieved by seeking epistemic friction, through an active attempt to seek out counterpoints and alternative viewpoints. I have explored three different ways in which such epistemic friction could be sought after. First, the inclusion of more Māori academics in the (editorial) writing teams could lead to a more diverse perspective, allowing Māori to directly participate and (when necessary) criticise certain constructions of risk. For this approach, it is important to be alert for the exclusive inclusion of those Māori academics that work within the framework that has previously been set by Westernised epistemology, as this would not contribute to counter-perspectives. Therefore, the second way of seeking epistemic friction that I have explored, is the inclusion of more research that is based on mātauranga Māori. While this type of inclusion could rather easily be institutionalised by the IPCC, there are some critical notes made by Māori academics, specifically related to the appropriating of knowledge and concepts that are important for mātauranga Māori. How (and to what extent) mātauranga Māori is to be included is perhaps best answered by those to whom this epistemology is valuable; Māori. Yet, for the inclusion of other epistemologies *as* epistemic friction, another condition must be met; the unveiling of the Westernised gaze in science as a perspective. Only when all perspectives are distinguishable *as perspectives*, rather than as an unchallengeable background, can epistemic friction occur.

To achieve this, I have argued that the IPCC should explicate some of the epistemic presumptions that underly the construction of risks, which are currently mostly informed by Westernised epistemology. Making the influence of Westernised epistemology visible, allows people working with different epistemic backgrounds to challenge to influence of Western epistemology on constructions of risks. Or, as Pinn has stated: “By not thinking too highly of oneself [i.e. credibility excess], there is a counterinvitation for racial minorities to move away from thinking too little of themselves in line with racial oppression and the status quo [i.e. credibility deficit]” (Pinn, 2017: 79).

Conclusion

The aim of this thesis was to explore the dynamic of epistemic justice and injustice in relation to the construction of global climate change risks that the IPCC presents. Specifically, I aimed to answer the question how global climate change risks, as constructed by the IPCC, contribute to epistemic (in)justice for Māori epistemology.

To answer this question, I have analysed how global climate change risks are constructed by the IPCC in chapter 2. Following Ulrich Beck, I have argued that risks constructions are tightly related to some form of selection. In modern societies overflowing with (not always coherent) information, risk constructions require the selection and prioritisation of information and interests. This process of selection and prioritisation, however, is guided by some understanding of acceptance, of nature, and ultimately of how we wish to live. Risk constructions are necessarily shaped by how we understand nature, which losses of nature we are willing to accept and which (potential) losses of nature justify political action. This normative dimension is concealed in the IPCC's risk constructions by a techno-managerial approach, focus on natural sciences and claims of objectivity.

Additionally, I have argued that the IPCC contributes to the (further) homogenisation of climate change knowledge. With their focus on consensus, they present a misleadingly coherent construction of risks that bypasses the potentially dissenting understanding of some of the notions I have mentioned above. However, as a global authority on climate change science, the IPCC is incredibly influential on both global policy and political action, as well as research on climate change. They have thus achieved a hegemonic position of a particular construction of climate change risks, which is presented as objective and would thus be ignorant to ignore.

In chapter 3 I have explored the ethical issues related to this way of constructing climate change risks, specifically for Māori epistemology, by referring to the theory of epistemic injustice. I have argued that the underrepresentation of Indigenous knowledge in IPCC reports, as described by both Indigenous and non-Indigenous academics, is a form of epistemic injustice, because it contributes to an unjust marginalisation of mātauranga Māori (as an Indigenous epistemology). While the use of Western epistemology is, of course, no injustice as such, the systematic overrepresentation of this epistemology falsely reaffirms its

position as the only epistemology that is able to explain all phenomena in the world, while other epistemologies are only valued in relation to Western epistemology, rather than in its own rights. Consequently academics (and lay people) are harmed in their capacity as a knower, because they are given less credibility in their understanding of climate change and climate change risks than non-Indigenous counterparts. Their epistemologies and knowledge on climate change or climate change risks that follows from these epistemologies are therefore not used in the global construction of climate change risks. By further homogenising global climate change science and risk constructions, the IPCC plays an important role in this form of epistemic injustice, as it further consolidates the privileged position of Western epistemology, while marginalising other epistemologies and ways of constructing climate change risks.

While the IPCC currently reiterates the epistemic injustice I have described above, I have argued in chapter 4 that it can also contribute to its positive counterpart and can thus help overcome epistemic injustice. I have utilised José Medina's concept of epistemic friction to explore different ways in which the IPCC could overcome epistemic injustice. Epistemic friction, understood as actively seeking out other perspectives and counterpoints, can be institutionalised by implementing principles of diversity, either related to Māori academics, or to research based on mātauranga Māori. In both these approaches, however, the IPCC has to be alert as to not only include those academics, or that type of research, that is similar enough to Western epistemology. While I have explored some important criticisms, I have argued that the appropriate extent of inclusion and representation of mātauranga Māori can best be judged by Māori.

Instead, I have focused on a different condition for epistemic friction, namely the unveiling of the Western gaze in the IPCC's constructions of risk. I have argued, that by explicating some of the epistemic presumptions in IPCC reports which are based on Western epistemology and understanding of science, the Western frame becomes visible and can be challenged more easily, leading to epistemic friction. Important contributions to this type of 'unveiling' can be made from the fields of humanities and social sciences, and should thus play a more considerable role in the constructions of risks that the IPCC present.

Thus, to summarise, while the IPCC currently reiterates epistemic injustice for Māori epistemology by presenting a homogenised construction of risk (that is mainly informed by Western epistemology) as objective and universally valuable, it can also overcome this type of injustice by acknowledging the role of Western epistemology in the construction of climate change risks, allowing people working with other epistemologies to criticise the IPCC's

constructions and thus enable epistemic friction.

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Appendix

List of Māori terms used:¹⁴

Aotearoa	North Island - now used as the Māori name for New Zealand.
Māori	Indigenous New Zealander, indigenous person of Aotearoa/New Zealand.
Mātauranga Māori	Māori knowledge - the body of knowledge originating from Māori ancestors, including the Māori world view and perspectives, Māori creativity and cultural practices.
Pākehā	New Zealander of European descent - probably originally applied to English-speaking Europeans living in Aotearoa/New Zealand.
Te reo Māori	(Māori) Language, dialect, tongue, speech.
Tikanga	Correct procedure, custom, habit, lore, method, manner, rule, way, code, meaning, plan, practice, convention, protocol - the customary system of values and practices that have developed over time and are deeply embedded in the social context; Tikanga Māori is also commonly used to describe knowledge (Smith et al., 2016: 134)
Tino rangatiratanga	Self-determination, sovereignty, autonomy, self-government, domination, rule, control, power.

¹⁴ Translations taken from <https://maoridictionary.co.nz/>, unless specified otherwise